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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.             | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------------------|------------------|
| 10/048,142   | 07/16/2002  | Nico Lugil           | VANM244.001APC                  | 2736             |
| 20995 7590 05/01/2007<br>KNOBBE MARTENS OLSON & BEAR LLP<br>2040 MAIN STREET<br>FOURTEENTH FLOOR<br>IRVINE, CA 92614 |             |                      | EXAMINER<br>BURD, KEVIN MICHAEL |                  |
|  |             |                      | ART UNIT                        | PAPER NUMBER     |
|  |             |                      | 2611                            |                  |
| SHORTENED STATUTORY PERIOD OF RESPONSE   |             | NOTIFICATION DATE    | DELIVERY MODE                   |                  |
| 3 MONTHS   |             | 05/01/2007           | ELECTRONIC                      |                  |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 05/01/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com  
eOAPilot@kmob.com

## Office Action Summary

Application No.

10/048,142

Applicant(s)

LUGIL ET AL.

Examiner

Kevin M. Burd

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 40-93 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 78-84 is/are allowed.
- 6) ☒ Claim(s) 40-61, 63, 70, 77 and 85-93 is/are rejected.
- 7) ☒ Claim(s) 62 and 64-69 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 July 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

1. This office action, in response to the amendment filed 2/8/2007, is a final office action.

### ***Response to Arguments***

2. Applicant's arguments with respect to claims 40-77 have been considered but are moot in view of the new grounds of rejection stated below. Rejections of new claims 85-93 are also stated below.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 40-61, 63, 70-77 and 85-93 are rejected under 35 U.S.C. 103(a) as being unpatentable over Philips et al (US 5,872,810) in view of Whitmarsh et al (US 5,381,108).

Regarding claims 40, 74, 75, 85, 86, 88, 89, 91 and 92, Philips discloses a CDMA communication device shown in figures 1 and 2 and a method of using the communication device. The device comprises a CDMA transmitter and receiver (figure 2). The device comprises RAM 206 as well as registers (column 14, lines 63-66; column 16, lines 15-17 and column 20, lines 12-15). The device comprises an acquisition circuit (column 21, line 65 to column 22, line 5). Phillips does not disclose a phase circuit for

phase unbalance precompensation comprised in the CDMA transmitter wherein the circuit substantially removes the I, Q phase difference that causes the phases of I and Q signals to not have a 90 degree separation. Whitmarsh discloses an automatic calibration of the quadrature balance with in a Cartesian amplifier shown in figure 1.

Whitmarsh further discloses quadrature mismatch appears as either an alteration in the gain of one of the quadrature paths relative to the other or as a phase shift away from the ideal 90 degree difference between the quadrature paths (column 5, lines 22-27). To compensate for the quadrature mismatch it is apparent that a predistortion algorithm as shown in figure 5 can be utilized (column 5, lines 28-30). Additional information regarding the preprocessing and predistortion can be found in columns 6 and 7. This method for removing quadrature mismatch will reduce the distortion present to acceptable levels (column 5, lines 40-48). Removing the distortion will allow the data to be transmitted (and recovered) with less errors and the recovery of the data will be conducted more quickly. For this reason, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Whitmarsh into the system of Phillips.

Regarding claims 41 and 70, Philips further discloses a circuit comprising a noise estimator 242 that performs a sum of the absolute values of the I and Q branch output (column 18, lines 10-15) and a programmable low-pass filter (column 18, lines 1-10).

Regarding claim 42, Philips further discloses a circuit comprising a noise estimator 242 that performs a sum of the absolute values of the I and Q branch output (column 18, lines 10-15). The DSP 204 reads the signal energy level from the noise

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estimator 242 and uses this information to control the gain of the receiver (column 18, lines 15-19). Philips also discloses correlators 224 used for synchronization purposes (column 14, line 63 to column 15, line 11).

Regarding claims 43 and 44, Philips further discloses a circuit comprising a data buffer 221, I and Q spreaders 223 and 225 and gain control 227. These elements prepare the data for transmission in figure 2.

Regarding claims 45-47, Philips further discloses processor 204 in figure 1.

Regarding claims 48-50, Phillips further discloses the transmitter chip matched filter 220 performs shaping of the spread base band signals from spreaders 222, 223 (column 16, lines 23-28).

Regarding claim 51, Philips discloses to transmit and receive GPS signals (column 14, lines 63-66).

Regarding claims 52-58, Philips discloses chip-matched filters 220, 220a are over sampling low pass filters (column 14, lines 57-60) and these filters perform shaping of the base band signals (column 16, lines 23-28). In addition, the transmitter is arranged for multi-code transmission (column 1, lines 17-42).

Regarding claims 59, 72 and 73, the receiver comprises a pulse shaper and demodulator for recovering the received information (figure 2). Early and late correlations are computed (column 18, lines 20-26 and column 36, lines 12-26)

Regarding claim 60, Philips discloses down converter 212 is prior to pulse shaping filter 241 in figure 2.

Regarding claim 61, Philips discloses to transmit and receive GPS signals (column 14, lines 63-66).

Regarding claims 63 and 71, Philips further discloses the levels of the I and Q branch can be separately adjusted (column 16, lines 50-53).

Regarding claim 76, Philips discloses to transmit and receive GPS signals (column 14, lines 63-66).

Regarding claim 77, Philips further discloses processor 204 in figure 1.

Regarding claims 87, 90 and 93, as stated above, Whitmarsh discloses the phase shift away from the ideal 90 degree difference is compensated for (column 5, lines 22-48). The correction is fed back as shown in figure 1.

#### ***Allowable Subject Matter***

4. Claims 62 and 64-69 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. Claims 78-84 are allowed.

#### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Schnabl et al (US 5,903,611) discloses predistortion component of a transmitter as shown in figure 1. Balance defects are compensated for as described in column 6, lines 8-59.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

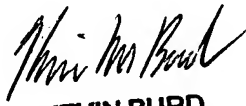
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is (571) 272-3008. The examiner can normally be reached on Monday - Friday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kevin M. Burd  
4/24/2007

  
**KEVIN BURD**  
**PRIMARY EXAMINER**